

In the Claims

Claim 1 (currently amended): A method of forming a monolayer of functionalized silicon on a substrate surface, the functionalized silicon including an organic group covalently attached with the silicon, the method comprising exposing the substrate surface to a precursor comprising the functionalized silicon, the precursor interacting with the substrate to form the monolayer across at least a portion of the surface of the substrate; and wherein the exposing of the substrate surface to the precursor occurs in a supercritical fluid comprising one or more members of the group consisting of ammonia, freons, nitrogen, noble gases, hydrocarbons and aromatic compounds, wherein the substrate comprises a glass fiber; and further comprising, after forming the monolayer, incorporating the glass fiber into a fiberglass matrix by bonding the organic group within a polymeric material.

Claim 2 (canceled).

Claim 3 (original): The method of claim 1 wherein the pressure is at least 100 psi.

Claim 4 (original): The method of claim 1 wherein the pressure is at least 1000 psi.

Claim 5 (original): The method of claim 1 wherein the pressure is at least 4000 psi.

Claim 6 (original): The method of claim 1 wherein the pressure is at least 8000 psi.

Claims 7-13 (Canceled)

Claim 14 (original): The method of claim 1 further comprising forming a film of water across a surface of the substrate prior to the exposing of the substrate to the precursor.

Claim 15 (original): The method of claim 1 wherein the precursor is selected from the group consisting of siloxanes, silazanes and chlorosilanes.

Claim 16 (previously presented): The method of claim 1 wherein the exposing of the substrate surface to the precursor occurs for a time of at least about 10 seconds.

Claim 17 (previously presented): The method of claim 1 wherein the exposing of the substrate surface to the precursor occurs for a time of at least about 30 seconds.

Claim 18 (previously presented): The method of claim 1 wherein the exposing of the substrate surface to the precursor occurs for a time of at least about minute.

Claims 19-29 (canceled).

Claim 30 (currently amended): A method of functionalizing an oxygen-containing surface, comprising exposing the surface to precursor molecules, the precursor molecules comprising core atoms from which crosslinking atoms and functional groups extend; the precursor molecules interacting with the oxygen of the oxygen-containing surface to form a monolayer across at least a portion of the surface, the monolayer layer comprising the functional groups; and wherein the exposing of the oxygen-containing surface to the precursor molecules occurs in a supercritical or non-supercritical fluid comprising one or more members of the group consisting of ammonia, hydrocarbons and aromatic compounds, wherein the surface is a surface of a glass fiber; and further comprising, after forming the monolayer, incorporating the glass fiber into a fiberglass matrix by bonding the monolayer within a polymeric material.

Claim 31 (canceled).

Claim 32 (original): The method of claim 30 wherein the core atoms are silicon.

Claim 33 (original): The method of claim 32 wherein the precursor molecules are selected from the group consisting of siloxanes, silazanes and chlorosilanes.

Claim 34 (original): The method of claim 30 wherein the pressure is at least 100 psi.

Claim 35 (original): The method of claim 30 wherein the pressure is at least 1000 psi.

Claim 36 (original): The method of claim 30 wherein the pressure is at least 4000 psi.

Claim 37 (original): The method of claim 30 wherein the pressure is at least 8000 psi.

Claims 38-58 (canceled).